# US EPA Region 7 Introduction to R Workshop

This repository contains materials for an R workshop for USEPA Region 7 New England Regional Staff. The workshop will provide attendees with an introduction to the R Language for statistical computing and will cover the folling topics:

* R Syntax
* Packages
* Data Types and Data Structures
* Reading in external data
* Data Manipulation
* Data Aggregation
* Data Visualization
* Exploratory Data Analysis

The goal of this workshop is to provide a solid basis for futher learning in R and will focus on the language, data management, and visualization. While we will cover some basic data analysis, the focus will not be on statistics and modelling. Participants will gain familiarity with syntax, data structures, and several popular packages including dplyr, tidyr, and ggplot2.

# Tentative Workshop Schedule

## Day 1

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| Time | Topic |
| 8:30 AM - 9:15 AM | Welcome, Introductions, and Motivation |
| 9:15 AM - 10:45 AM | [R Basics](lessons/r_basics.md) ([pdf](lessons/r_basics.pdf)) |
| 10:45 PM - 11:00 AM | *BREAK* |
| 11:00 AM - 12:30 PM | [Data in R](lessons/data_in_r.md) ([pdf](lessons/data_in_r.pdf)) |
| 12:30 PM - 1:00 PM | *LUNCH* |
| 1:00 PM - 2:30 PM | [Data manipulation](lessons/data_manipulation.md) ([pdf](lessons/data_manipulation.pdf)) |
| 2:30 PM - 2:45 PM | *BREAK* |
| 2:45 PM - 4:00 PM | [Data aggregataion](lessons/data_aggregation.md) ([pdf](lessons/data_aggregation.pdf)) |

## Day 2

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| --- | --- |
| Time | Topic |
| 8:30 AM - 10:45 AM | [Exploratory Data Analysis](lessons/eda.md) ([pdf](lessons/eda.pdf)) |
| 10:45 PM - 11:00 AM | *BREAK* |
| 11:00 AM - 12:30 PM | [Data Visualization 1](lessons/data_viz.md) ([pdf](lessons/data_viz.pdf)) |
| 12:30 PM - 1:00 PM | *LUNCH* |
| 1:00 PM - 2:30 PM | [Data Visualization 2](lessons/data_viz.md) ([pdf](lessons/data_viz.pdf)) |
| 2:30 PM - 2:45 PM | *BREAK* |
| 2:45 PM - 4:00 PM | [Data analysis basics](lessons/data_analysis_basics.md) ([pdf](lessons/data_analysis_basics.pdf)) |

## EPA Disclaimer

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